

ENVR 110 – Introduction to Environmental Studies
~ Fall Semester, 2009 ~

Instructor: Kerri Mullen, M.S. **E-mail address:** kmullen@moravian.edu
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Office hours: Tuesday @ 10:00–11:00 AM [Mon, Wed & Thurs. 2:15-3:00 PM by *advanced appointment*]
Please note: I am not on campus after 3:30 and all day Fridays

Class meeting times: Mondays & Wednesdays @ 1:10 – 2:20 p.m. in Collier Hall of Science 204

Course online sites: **Blackboard: Course ID: ENVR110.FA09**
Access Code: GREEN

Web Browsers for Blackboard (*keep as updated as possible*):

- **PC Users:** use Explorer or Firefox
- **Mac Users:** use Firefox or Safari

Blogger: <http://introtoenvironmentalstudies.blogspot.com/>
You will be “invited” to join this blog, so please be sure to provide the instructor with your email address immediately so you can join online class discussions as soon as possible.

**Course text/
required books:** Withgott & Brennan, Essential Environment: The Science Behind the Stories, 3rd ed. Pearson Education, Inc. (San Francisco, CA)

Withgott & Brennan, Activities Workbook, w/ contributors Keller & Boave

Note: You will also have a number of other readings that will be handed out in class, made available as PDF on Blackboard, placed on reserve in Reeves library, or that you will find from print media and internet sources throughout the semester.

Introductory comments:

I realize that those of you who are enrolled in this class have a variety of interests and that different students signed up for this course for different reasons. The main focus of this course is to introduce you to the broad topic of environmental studies. Environmental issues are quite complex, and typically, environmental problems are best studied and addressed through interdisciplinary approaches. Environmental issues are also often controversial -- usually because of conflicting values of those involved in the decision-making processes that will solve problems or lead to policy related to the environment. My job will be to provide you with some scientific framework related to environmental topics and help you to explore the various perspectives involved in addressing environmental problems. In other words, besides analyzing the scientific aspects of contemporary environmental issues, we will also consider risk, the concept of environmental ethics, the role of the media in influencing public opinion, economic and social issues, politics, and public policy related to science and the environment.

We will take an interdisciplinary approach to examine the various components of the world in which we live, discussing human impacts on the environment and vice-versa. More than any other living organism, humans have the ability to impact the environment and disrupt natural cycles through population growth, industry, policy decisions, and applications of technology which can sometimes have unforeseen consequences. Thus, we will also discuss key environmental issues of concern. Individuals can profoundly effect change through public

sentiment and voting, and, in turn, impact public funding and policy decisions. You have the power to influence the direction of science research, the applications and regulation of technology, and the status of our environment. Because of this, I strongly believe that every individual should be a responsible, informed, and active participant in the governing processes.

I will try to provide lecture outlines with expected outcomes for each class to help keep us all organized. These outlines will be presented at the start of each class and will highlight key topics covered in lecture and discussion. I will also provide a class schedule with a list of the topics covered, assigned readings and projects, and workbook problems. I expect each of you to complete assigned readings *before* each lecture, and complete assignments by the due date specified on the schedule. Each day, you should be ready and willing to participate in class discussions as class participation is part of your final grade. Please check Blackboard and your email regularly as I will routinely post announcements, reminders, schedule changes, etc.

Course objectives: By the end of the semester, students should:

- Have an understanding of the fundamental scientific concepts that underlie key environmental topics and of the environmental challenges facing us today;
- Have an appreciation for the complexity and value of ecosystems, biodiversity and the relationship between humans and their environment;
- Realize the wide range of values, risk assessment, and social, economic, historical, and political factors that influence the development of public policy – especially as it pertains to environmental regulations, conservation, and stewardship;
- Understand the global nature of many environmental issues and appreciate the wide range of world views on the value and priority of the environment;
- Be able to assess scientific and other forms of data, along with information presented by the media for validity and relevance to environmental issues being considered; and
- Gain further experience in critical thinking, oral and written communication skills, and using technology to access important information.

Course policies, procedures, and expectations:

Academic integrity: Academic integrity is of utmost importance, and cheating or plagiarism will not be tolerated. Please read the Academic Honesty Policy that is included in the student handbook *and* the policy that I will distribute in class. I will circulate a sheet during the 2nd class that each of you will sign indicating that you have read and understand the policy and implications of violating it. If you have any questions about plagiarism or other forms of academic dishonesty, please ask. Several assignments in this class will involve the use of internet resources, and it is my experience that students often do not realize that copyright violations and plagiarism policies still apply.

Attendance policy: As noted in the student handbook, students are expected to attend classes regularly. Due to emphasis on class discussions and group work in this course, regular attendance is essential. Frequent unexcused absences will have a negative impact on your grade for the course. I will recognize legitimate excused absences, such as when students are representing the university in an official capacity (e.g. for intercollegiate athletic competition (but not practice) off-campus music performances, etc.). Such activities are scheduled ahead of time; thus, I expect you to make arrangements with me ahead of time for missed work. In the event of an extended absence due to illness or other legitimate reasons, please notify me *and a representative in the Learning Services Center* as soon as possible. In the case of severe illness, accidents, etc., we will work out arrangements (e.g. for making up work, obtaining an incomplete or withdrawing from the course) on a case-by-case basis.

Please note that during the class periods, I will intersperse lectures, whole class and small group discussions and assignments, hands-on activities, and problem solving. I have also invited several guest lecturers

to present their own expertise and various viewpoints to the class. These guest lectures, spontaneous discussions, and in-class activities cannot be learned simply by reading the text without coming to class and being an active participant. I am fond of spontaneous in-class assignments that are turned in before the end of the class period, and these cannot be made up if you are absent. In other words, if you miss class, you miss out. Students who arrive late to class disrupt the flow of the session and distract their peers. **Please be prompt!** And be sure to **TURN CELL PHONES OFF** during class time. If interruptions are noted, you may be asked to leave the class.

*If class is canceled due to a campus emergency, inclement weather, or by the instructor, notification of the cancellation will be posted on the Moravian College web site and/or the ENVR 110 Blackboard site as early as possible. Please be prepared to discuss the missed material in the next class.

Assignments: I utilize a variety of types of assignments including group projects (in and out of class), short writing assignments, internet-based assignments, etc. Timely completion of the work is expected; **late submissions will be docked 10% of the evaluated grade per day** (including weekends). I expect all **PRINTED** assignments to be handed to me **IN PERSON**. Unless it is an emergency (accompanied by official document, such as a doctor's note), **I will not accept electronic documents via email**. This policy is in place because (1) I do not have a printer at home, and (2) it avoids issues that result from Mac / PC and software version differences. All printed documents should have **margins of less than 1 inch** and text should be **Times New Roman 11 point font** and **1.5-spaced**. Please include a heading that contains your name, the date, the class, and the assignment title. As this is an *environmental* class, let's save some trees! I expect **all assignments to be printed on both sides of the paper, or on the back of previously used paper**.

Blogging: Throughout the course, it is a good idea to be aware of stories in the media that relate to scientific and environmental topics. The internet can be a valuable resource, but you have to critically evaluate the content and source of the information that you find. Often, timely stories break in the news that warrant our consideration in class, and your familiarity with media coverage of science and environmental issues can (and will) provide the basis for class discussions. I expect you to be current on environmental stories in both the printed and web-based media. Be prepared to share your findings both in class and on our class blog: **I would like each of you to participate in a class BLOG throughout the semester**. Active participation in class and web discussions will be noted and will have a positive effect on your final grade for the course.

Please date your blog entries and include the source of your information (e.g. which newspaper and what date, what magazine, edition and page number, the URL of a website, etc.). Recording and commenting on stories that catch your attention or that relate to topics we are discussing in class, will allow you to reflect on what you are learning and how it applies to the "real world", and will allow you to follow trends throughout the semester. I expect that you should have at least 2 entries (news items) per week; examples include (1) *thoughtful* reactions or comments on any material covered in class, (2) original summaries with *thoughtful* comments or reactions to a news story you found in the media (include link), or (3) a *thoughtful* reaction to another student's post. **Each day, we will begin class with a review of timely news stories related to the environment and other topics being discussed in class** At the end of the semester, I will ask you to summarize what you have learned from the class blog and what trends or major issues you noticed.

While I want all of your entries to be thought-provoking and critical, please restrict your critiques to the issues themselves and not direct them toward fellow classmates. I expect all bloggers to be polite and consider all viewpoints on a matter. All blog entries must be appropriate and related to the class. If you post anything that is rude, offensive, or unrelated to the class, the instructor as moderator will terminate your access to the site, and this will have a definite negative impact on your grade.

Exams: Exams will cover material from lectures, class discussions, and the assigned readings and sample problems from the text or other assignments. Please refer to lecture outlines for review material. Exam questions may be taken directly from the text, so please review the questions and problems at the end of each chapter. If you do not understand any of the questions or problems, it is your responsibility to ask me about them in class, during office hours, or via email. Exam questions will also be based on class discussion, so you must be

present for ALL classes if you expect to be fully prepared for formal evaluation of your performance. You should expect at least a portion of each exam to be essay format. **No make-up exams** will be administered without an official medical or university excuse.

<u>Grading:</u>	<u>% of Total Grade</u>
Participation in class and group discussions and activities, including blog	20
Assignments and projects, both group and individual	35
Exam #1 (Tuesday, September 25th)	15
Exam #2 (Thursday, November 1st)	15
Final Exam (to be scheduled during the Exam Period)	15

I do look at trends in grades over the semester; improvement in test grades over the duration of the course will be favorably noticed! Participation in class & blog discussions is expected and will be a factor in the determination of final grades. Please note that it is within the instructor's purview to apply qualitative judgment in determining grades for an assignment or for a course.

If you have concerns about your grade, please come talk with me about it early in the semester, and we can work together to improve your comprehension, study habits, test skills, etc. If you wait until the final weeks of the semester to express concern over a low grade, it will be too late.

**** EXTRA CREDIT:** *You will have the opportunity to increase your final grade by up to 4 points by attending the Pennsylvania Renewable Energy and Sustainable Living Festival, September 22-23. You should plan on attending for a minimum of one-half day. To receive credit, you must hand in your entrance ticket stub or a receipt, as well as your reaction and critical summary of each exhibit and or seminar you attended. You will need to arrange your own transportation (there may be a Moravian shuttle available, more information forthcoming), and no reimbursement will be made for the entry fee. More information on the event can be found at <http://www.paenergyfest.com/general.shtml>.*

*If you cannot attend this event, you may arrange another independent field trip with me. Examples include visiting a local sewage treatment plant, the Lehigh Gap Nature Center (www.lgnc.org), a local solid waste management or recycling facility, etc. Although the trip may be done later in the semester, you must arrange details with me **BEFORE FALL RECESS**. After this, you will have forfeited your opportunity for extra credit.*

The 1-4 points earned will be at the discretion of the instructor, and will be applied to your final grade. For example, if you receive 2 extra credit points, and you finish with an 82% (B-), your grade will be an 84, and a B will be your grade with the registrar.

****There will be other spontaneous Extra Credit opportunities throughout the semester - for example, attending an environmentally-related evening lecture or seminar at an LVAIC College or in the community. These opportunities will be worth 1-4 points added onto any Exam, and will be graded based on attending (worth 1 point) plus a thoughtfully-written summary and reaction (worth 1-3 points).**

Family Educational Rights and Privacy Act (FERPA) If you are over the age of 18, please be aware of your right to privacy. Student records are confidential and may not be released (even to your parents) without your written consent. Visit <http://www.ed.gov/print/policy/gen/guid/fpco/ferpa/index.html> for complete policy details.

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~ Fall Semester, 2009 ~

Instructor: Kerri Mullen, M.S.

CLASS SCHEDULE* & TOPICS COVERED

**this schedule is subject to change at the discretion of the instructor*

Monday, August 31st – FIRST DAY OF CLASS

- Introduction: Instructor, Students, Syllabus & Academic Integrity Policy (due 9/2 in class)
- Lecture: A Brief Environmental History in the U.S.
- Group Activity: Environmental impacts of everyday items (multidisciplinary), 1 page reaction / summary due Wed. 9/2 in class (individual), Environmental Awareness Internet Research worksheet, due Wed. 9/2 in class (individual)
- Assignments: Read ACADEMIC HONESTY POLICY & Chapter 1
- Sign in to the following: Blog web site access & Blackboard

Wednesday, September 2nd – Chapter 1: An Introduction to Environmental Science

- ACADEMIC HONESTY POLICY – signature of Academic Integrity due in class
- Due in Class: 1-page Environmental Impacts Activity Reaction / Summary (individual) & Environmental Awareness Internet Research (individual)
- Group Activity: Come up with a definition for “Environment”, worksheet due end of class (group)
- Assignments: Workbook Topic 1 - Ecological Footprints, Read Chapter 2
- Scan current media & Blog

Monday, September 7th – Chapter 2: Environmental Economics & Environmental Policy

- Due in Class: Workbook Topic 1 - Ecological Footprints
- Group Activity: Workbook Topic 2 - The Economy & the Environment (*Case Study*)
- Assignments: Watch 10 parts of “The World According to Monsanto” on YouTube http://www.youtube.com/watch?v=c_OJcPKEYDE
- Scan current media & Blog

Wednesday, September 9th – Environmental Economics, Policy & Ethics (*Class Discussion*)

- Due in Class: Workbook Topic 2 - The Economy & the Environment
- Group Activity: Discussion questions, pertaining to “The World According to Monsanto,” followed by class discussion
- Assignments: Read Pew Initiative on Food & Biotechnology: When Media, Science & Public Policy Collide (found at http://www.pewtrusts.org/news_room_detail.aspx?id=33416); Gregory & Miller 1998, Chapter 6: Case Studies in Public Science, pp. 154-165 (on reserve), Apple 1996 (on reserve)
- Scan current media & Blog

Monday, September 14th – Science, the Media, the Public, & Environmental Ethics

- Group Activity: Discussion questions include: What is an appropriate level of regulation at the local, national, international level? What factors should be considered in the regulatory process? Describe the benefits and risks. How should we “weigh” risks and benefits? What does the public expect out of regulators? How do or should we deal with uncertainty in science? How do the media communicate the science and regulatory nuances to the non-expert? What do you think is needed for the public to have a better understanding of science?
- Assignments: Read Chapter 3, Workbook Topic 4 - Chemistry & the Environment
- Scan current media & Blog

Wednesday, September 16th – Chapter 3: Environmental Systems – Chemistry, Energy, & Ecosystems

- Due in Class: Workbook Topic 4 - Chemistry & the Environment
- Group Activity: Workbook Topic 4 - Chemistry & the Environment (*Case Study*)
- Assignments: Read Chapter 4, Workbook Topic 5 - Evolution & Biodiversity
- Scan current media & Blog

EXTRA CREDIT: Saturday & Sunday, September 18th, 19th & 20th – Pennsylvania Renewable Energy & Sustainable Living Festival: <http://www.paenergyfest.com/> (see syllabus for assignment details)

Monday, September 21st – Chapter 4: Evolution, Biodiversity, and Population Ecology

- Due in Class: Workbook Topic 5 - Evolution & Biodiversity
- Guest Speaker: Dr. Sean Mullen, Assistant Professor of Evolutionary Genetics, Lehigh University
- Assignments: Read Chapter 5, Workbook Topic 6 - Community Ecology
- Scan current media & Blog

Wednesday, September 23rd – Chapter 5: Species Interactions & Community Ecology

- Due in Class: Workbook Topic 6 - Community Ecology
- Group Work: Workbook Topic 6 - Community Ecology (*Case Study*)
- Assignments: STUDY for EXAM!!!
- Scan current media & Blog

Monday, September 28th – EXAM #1

- Assignments: Read Chapter 6 & Hertsgaard 1999 - The Hurricane of Hell (on reserve)
- Scan current media & Blog

Wednesday, September 30th – Chapter 6: Human Population

- Group Work: Workbook Topic 8 – Human Population
- Assignments: Hardin 1965 – “The Tragedy of the Commons” & Hertsgaard 1999 - How Population Matters (on reserve), *you may also want to begin thinking about the assignment for next week*
- Scan current media & Blog

Monday, October 5th – The Relationship Between Population and the Environment

- In-Class Exercise: M&Ms!
- Assignments: Read Chapter 7 & Propose a Public Policy, Executive Order or a Law pertaining to the issue of Population (in a paragraph of not more than 200 words). Explain the meaning and implications of this Policy or Law, and be prepared to present a "Brief" (a defense) of this Policy or Law, designed to convince a legislature (due next class). **You may work in groups.*
- Scan current media & Blog

Wednesday, October 7th – Chapter 7: Soil, Agriculture & the Future of Food

- Guest Speaker: DEP, Northampton County Conservation (soil erosion & sediment control, 20 min)
- Due in Class: Your Population Policy, Executive Order or Law Summary & Public “Briefing” (2-3 minutes)
- Assignments: Workbook Topic 9 – Soils, Workbook Topic 10 – Agriculture & the Food We Eat
- Scan current media & Blog

Monday, October 12th – FALL RECESS - NO CLASS

Wednesday, October 14th – Soil, Agriculture & the Future of Food (cont.)

- Guest Speaker:
- Due in Class: Workbook Topics 9 & 10
- Assignments: Write a 1-page summary & reflection, Read Chapter 8
- Scan current media & Blog

Monday, October 19th – Chapter 8: Biodiversity & Conservation Biology

- Due in Class: 1-page summary & reflection
- Class Activity & Discussion: Produce Diversity
- Assignments: Workbook Topic 11 – The Importance of Protecting Soils
- Scan current media & Blog

Wednesday, October 21st – Conservation Biology & Invasive Species in the Lehigh Valley

- Guest Speaker:

- Group Work: Workbook Topic 11 (*Case Study*)
- Assignments: Read Chapter 9, Workbook Topic 12 – Forest Management
- Scan current media & Blog

Monday, October 26th – Chapter 9: Cities, Forests & Parks – Land Use & Resource Management

- Due in Class: Workbook Topic 12
- Group Work: Workbook Topic 12 (*Case Study*)
- Assignments: Read _____, Workbook Topic 13 – Urban Land Use
- Scan current media & Blog

Wednesday, October 28th – Urbanization & Creating Livable Cities

- Due in Class: Workbook Topic 13
- Group Work: Workbook Topic 13 (*Case Study*)
- Assignments: **STUDY FOR EXAM #2**
- Scan current media & Blog

Monday, November 2nd – EXAM #2

- Assignments: Read Chapter 10, Workbook Topic 14
- Scan current media & Blog

Wednesday, November 4th – Chapter 10: Environmental Health & Toxicology

- Due in Class: Workbook Topic 14
- Group Work: Workbook Topic 14 (*Case Study*)
- Assignments: Read Steingraber’s “Having Faith” excerpt pp. 250-260 (on reserve)
- Scan current media & Blog

Thursday, November 5th @ 7:30 p.m. – Extra Credit Lecture: “When the Rivers Run Dry” by Fred Pearce

- Location: Prosser Auditorium
- This lecture will focus on global water issues and climate change, based on his book "When the Rivers Run Dry: Water -- the Defining Crisis of the 21st Century." He has also written books on global warming (With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change) and other sustainability issues (Confessions of an Eco-Sinner: Tracking Down the Sources of My Stuff). Fred is from England, and he will be in Washington D.C. earlier that week as a guest of the World Wildlife Fund.

Monday, Nov. 9th – Environmental Health & Toxicology (*cont.*)

- Video: Rachel Carson’s Silent Spring (The American Experience, PBS)
- Group Work: Discuss questions pertaining to the film, generate ideas for letter
- Assignments: Read Chapter 12, Write a 1-2 page letter to Rachel Carson expressing your reaction to the movie (you should do a printed or web media search, and reference at least 3 other sources in addition to the film)
- Scan current media & Blog

Wednesday, Nov. 11th – Ch. 12: Fresh Water, Oceans & Coasts - Systems, Resources & Conservation

- Due in Class: Typed Letter to Rachel Carson
- Group Work: Workbook Topic 15 (*Case Study*)
- Assignments: Read Chapter 13, Water Quality, Chemicals, & Consumer Choice - typed report due in class Mon. 11/16. **You may work in groups.*
- Scan current media & Blog

Monday, November 16th – Chapter 13: Atmospheric Science & Air Pollution

- Guest Speaker: Jim Wilson, DEP, Northampton County Conservation Watershed Specialist (20 min)
- Due in Class: Water Quality Report (*individual or group*)
- Group Work: Workbook Topic 17 (*Case Study*)
- Assignments: Read Chapter 14, Workbook Topic 17
- Scan current media & Blog

Wednesday, November 18th – Chapter 14: Global Climate Change

- Due in Class: Workbook Topic 17
- Group Work: Workbook Topic 18 (*Case Study*)
- Assignments: Robinson et al. 2007, Watch “An Inconvenient Truth,” available on reserve in Library; write a 1-2 page reaction piece, due Mon. 11/30 in class
- Scan current media & Blog

Monday, November 23rd – Global Climate Change (cont.)

- Due in Class: “An Inconvenient Truth” Reaction (individual)
- Class Discussion – reactions to the movie?
- Group Work: Debate – list the arguments for your side & prepare for class debate.
- Assignments: Read Chapter 15, Workbook Topic 18
- Scan current media & Blog

Wednesday, November 25th – Ch. 15: Nonrenewable Energy Sources, Impacts & Energy Conservation

- Due in Class: Workbook Topic 18
- Group Work: Choose an environmental issue that concerns you, then research the problem and compose a letter to your local, state or national representative(s) addressing your concerns, 1-2 pages, 1st *DRAFT* due in class Mon. 11/30 (*must include a minimum of 3-5 references*)
- Assignments: Read Chapter 16
- Scan current media & Blog

Monday, November 30th – Chapter 16: Renewable Energy Alternatives

- Due in Class: *DRAFT* of your letter to your representative
- Group Work: Workbook Topic 20 (*Case Study*)
- Assignments: Read Chapter 11, Workbook Topics 20 & 21
- Scan current media & Blog

Wednesday, December 2nd – Chapter 11: The Lehigh Gap Superfund Site – A Local Story of Industrial Air Pollution, its Effects, & Current Restoration Efforts

- Guest Speaker: Dan Kunkle, Director of the Lehigh Gap Nature Center
- Due in Class: Workbook Topics 20 & 21
- Assignments: Read Chapter 17, Watch the Story of Stuff
- Scan current media & Blog

Monday, December 7th – Chapter 17: Waste Management & The Story of Stuff

- Due in Class: Your article, written as a journalist
- Class Discussion: The Story of Stuff & Textiles
- Group Work: Workbook Topic 22(*Case Study*)
- Assignments: Read Epilogue
- Scan current media & Blog

Thursday, December 9th – Epilogue: Sustainable Solutions & The Future of the Environment

- Due in Class: Final Letter to Representative, with stamped & addressed envelopes provided – don’t forget to SIGN the letter!
- Classroom Discussion: Review & Reflection, summary due at the end of class (1/2-1 page)
- Group Work: Workbook Topic 23 (*Case Study*)
- Assignments: Take-Home Final Exam Question (cumulative), due at the Final (must be printed)
- Instructor Evaluations

STUDY WEEK / READING DAYS: December 11-16

FINAL EXAM:

**Any EXTRA CREDIT assignments are due at the final – no exceptions!*